

ON THE NAMES OF TWO SPECIES OF THE GENUS *CLYTIA*
LAMOUROUX, 1812 (CNIDARIA, HYDROZOA) COMMON IN
WESTERN EUROPE. Z.N.(S.)2493

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1. Introduction

All the known members of the hydroid genus *Clytia* Lamouroux, 1812 (p. 184) are thought to have both hydroid and medusa stages in their life cycles. One of the species, which has been variously known as *Clytia johnstoni* (e.g. sensu Hincks, 1868, p. 143) and *Phialidium hemisphaericum* (e.g. sensu Russell, 1953, p. 285), is in western Europe both a very common benthic organism and one of the most abundant medusae in the plankton. The second species treated in detail here, most frequently reported from its hydroid stage alone under the name *Clytia gracilis* (Sars, 1850, p. 138, as *Laomedea*), is probably the second commonest species of *Clytia* in the North Sea and associated waters.

2. There are long-recognized nomenclatural problems concerning the names of each of these species (summary in Cornelius, 1982a, pp. 78–79). Until recently there was also a debate concerning the distinctness of the two species from each other, and the nomenclatural questions could not be confidently resolved. But recent work, spanning several years, on Scandinavian populations (Östman, 1979a, b, 1982, 1983) has resolved this debate. The two species were characterized by Östman on skeletal morphology, nematocyst differences, anatomy of the medusae, and differences in breeding season and habitat. More recently Cornelius (in prep. 1) has found differences in polyp morphology between the two.

3. The species are common, and since several synoptic works are in preparation (e.g. Cornelius, in prep. 2; Cornelius and Ryland, in prep.) it is timely to resolve the long-standing nomenclatural issues surrounding their names.

2. The genus name *Clytia*

4. Two generic names have been most frequently applied to the genus in recent years. *Phialidium* Leuckart, 1856 (p. 18) has traditionally been used for nominal species known from the medusa stage; while *Clytia* Lamouroux, 1812, p. 184, has been the name by which those based on the hydroid stage have come to be known. Rearing experiments that have successfully linked the two stages of some of the species have revealed nomenclatural problems in both genus and species names. However, the case for regarding *Clytia* Lamouroux, 1812, as the accepted name for the genus is now overwhelming. The arguments have been put recently elsewhere (Cornelius, 1982a, p. 71). For some decades it was sensible to use

a dual system of names in western Europe, one (including *Clytia*) for the hydroid stages and the other (including *Phialidium*) for the medusae. The problem was that for many years it was not known to which hydroids the various medusae belonged, and *Clytia* has proved one of the more intractable genera in which to resolve these questions. But the life cycles of so many species of hydromedusae have now been worked out (summaries in Russell, 1953, 1970; Naumov, 1960; Edwards, 1972) so that, in western Europe at least, a single nomenclature is being applied throughout the order wherever possible (e.g. Naumov, 1960; Cornelius, 1982a; in prep. 2). The name to be used for the present genus is unquestionably *Clytia*. Some aspects of the availability of and type species of *Clytia* which do not impinge on the present discussion were treated in recent submissions to the Commission on other nomenclatural problems in the Campanulariidae (Cornelius, 1981, 1982b; ICZN Opinion 1345, 1985).

3. The species name *Clytia hemisphaerica* auct.

5. The most often collected *Clytia* species in western Europe is that variously known as *Phialidium hemisphaericum* (Linnaeus, 1767, p. 1098, as *Medusa*, type locality Belgian coastal plankton, the medusa stage) and *Clytia johnstoni* (Alder 1856, p. 359, as *Campanularia*; the hydroid stage). The complex nomenclatural history of both these species names was summarised by Cornelius (1982a), who followed some other recent authors in employing the combination *Clytia hemisphaerica* consequent upon rearing studies which apparently linked the two stages. But *johnstoni* and *hemisphaerica* were only subjectively linked (Cornelius & Garfath, 1980, p. 283; Cornelius, 1982a, pp. 79–80). Linnaeus, 1767, p. 1098, did not himself see a medusa specimen when introducing the name *hemisphaerica*, and cited as indication the description and sketchy illustration of Gronovius (1760, p. 38, pl. 4, fig. 7). Millard (1966, p. 477) regarded *hemisphaerica* Linnaeus, 1767, and the next available name, *johnstoni* Alder, 1856, as relating to the same species. Reasons for not using the name *Sertularia volubilis* Linnaeus, 1758, p. 811, have been discussed by both Millard (1966) and Cornelius (1982a).

6. But the linking of *johnstoni* hydroid to *hemisphaerica* medusa was only subjective. Although Alder's description of the hydroid stage was adequate and unequivocal, that of the medusa by Linnaeus, 1767, was not. The illustration and description by Gronovius, indicated by Linnaeus, did not include details of the gonads or time of year of collection of the specimen, probably making it impossible to determine on which of the two stages it was based.

7. The type series of the corresponding hydroid stage of the same species, that of *Campanularia johnstoni* Alder, 1856 (p. 359) was examined by Cornelius & Garfath, 1980 (p. 283). It was re-examined by PFSC and we concur that it conforms to the now accepted concept of the species in question. Hence we regard *johnstoni* Alder, 1856, as a subjective junior synonym

of *hemisphaerica* Linnaeus, 1767, with, we feel, more justification than have some previous authors who have taken the same view.

4. The species name *Clytia gracilis* auct.

8. The nominal species *Laomedea gracilis* Sars, 1850, p. 138 (redescribed in Sars, 1857, p. 160) was based on a mixed type series representing two species. This has caused confusion, since the species name *gracilis* sensu Sars has sometimes been applied to the 'wrong' species of the two (summary in Cornelius, 1982a, p. 94). Dating of the Sars, 1850, paper has been treated elsewhere (Cornelius, 1982a, p. 137). The material later illustrated by Sars (1857, pl. 2) was identified objectively with the original description. It comprised illustrations of two species, those today known as *Gonothyraea loveni* (Allman, 1859, p. 138, as *Laomedea*) (viz. Sars, 1857, pl. 2, fig. 4 only) and of the species now widely called *Clytia gracilis* (Sars, 1850) (viz. Sars, 1857, pl. 2, figs 1–3, 5). Cornelius (1982a, p. 92) assigned the latter illustrations to '*Clytia hemisphaerica*' but this apparently erroneous step reflected the past confusion between the two species. The type series (or 'type illustrations') of *L. gracilis* Sars, 1850, was perhaps first identified as mixed by Stechow, 1923 (p. 111) who similarly identified the two component species as *loveni* and *hemisphaerica* auct. We are grateful to Professor W. Vervoort for bringing Stechow's observation to our attention.

9. Cornelius (1982a, p. 94) introduced some stability by designating as lectotype 'the material resembling *C. hemisphaerica*' in Sars' (1850) series (illustrated in 1857). When Cornelius wrote this, he did not imply a distinction between *gracilis* s. str. and *hemisphaerica* s. str. (= *johnstoni*); he merely intended to designate as lectotype the material from Sars' mixed series that was not *Gonothyraea loveni*. This was prudent since the very widely used name *loveni* Allman, 1859, p. 138, would have become a junior subjective synonym of *gracilis* Sars, 1850, if the other part of the mixed type series had ever been so designated. The lectotype is here restricted to the single colony illustrated in Sars, 1857, pl. 2, figs 1–2.

10. A concomitant necessity, having aired these problems, was for Cornelius (1982a) to resolve the invalidity of the species name which had become rather widely used in the combination *Clytia gracilis* (Sars, 1850). There was a primary homonymy between *Laomedea gracilis* Sars, 1850, and *Laomedea gracilis* Dana, 1846 (p. 689; lapsus pro *Laomedea gracilis*), which Cornelius (1982a, p. 78) referred to *Obelia dichotoma* (Linnaeus, 1758, p. 812, as *Sertularia*). He partly overlooked the then very recent detailed study of the two *Clytia* species by Östman (1979b) and, like some other authors, considered the debate about the two species still unresolved. Hence it was then premature to attempt to establish *gracilis* s. str., and Cornelius introduced the nom. nov. *sarsi* Cornelius, 1982a, p. 78, in place of the preoccupied *Laomedea gracilis* Sars. At the time, it seemed that *C. sarsi* might not prove a valid species.

11. But it has become apparent, through subsequent publications by Östman and through the two present authors examining live examples of

the two species conjointly in both Norway and England, that '*sarsi*' is indeed a valid species. The differences between the two species have been touched on already (paragraph 2). Hence it seems appropriate now to establish a valid name for '*sarsi*' that will be acceptable and not confusing to hybrid taxonomists and ecologists.

12. Although the name *sarsi* is valid it has yet to find acceptance. The name *gracilis* has been widely applied to the species in question, and the following recent references from several countries, in which *gracilis* has been used in the accepted sense, establish a prima facie case for the name to be conserved by the Commission under the plenary powers: Blanco, 1967, p. 55; Fey, 1969, p. 393; Jägerskiöld, 1971, p. 63; Leloup, 1952, p. 155; Mammen, 1965, p. 16; Millard, 1957, p. 196; Naumov, 1960, p. 265; Östman, 1979a, p. 6, 1979b, p. 125, 1982, p. 156, 1983, p. 5; Rees & Thursfield, 1965, p. 95; Rossi, 1961, p. 79; Stepanyants, 1979, p. 32; Vervoort, 1968, p. 17. Moreover, we feel that continued use of the combination *Clytia gracilis* in the sense proposed here is both sensible and unlikely to lead to confusion. Our intention is to use this combination in forthcoming publications.

13. Several nominal species of the genus *Clytia* were described by Forbes (1841, 1848). They were described from British material and were certainly of one of the two species here called *C. hemisphaerica* and *C. gracilis*. They were either based on immature stages, or the descriptions were inadequate for assessment for other reasons. All clearly postdate the species name *hemisphaerica* Linnaeus, 1767 (see above), but any might predate the species name *gracilis* Sars, 1850. In our opinion none can at present confidently be referred to either species. The nominal species concerned are: *Thaumantias pileata* Forbes, 1841, p. 84, pl. 1, figs 3a–b; *T. thompsoni* ibid, p. 84, pl. 1, figs 4a–4b; *T. punctata* ibid, p. 85, pl. 1, figs 5a–b; *T. sarnica* ibid, p. 85, pl. 1, figs 6a–b. All four were redescribed by Forbes, 1848, in his monograph, but with partly erroneous citations of his earlier work. In the later work Forbes introduced the following nominal species which might also threaten the name *gracilis* but which in our opinion are similarly indeterminate: *Thaumantias lineata* Forbes, 1848, p. 48, pl. 11, fig. 1, and *T. inconspicua* ibid, p. 52, pl. 8, fig. 3. In the interests of nomenclatural stability we recommend in paragraph 14(1(b)) that these six species names introduced by Forbes, 1841, 1848, be suppressed and placed on the Official List of Rejected and Invalid Specific Names in Zoology.

5. Proposals

14. To conserve the established use of the species name *gracilis*, as introduced in the combination *Laomedea gracilis* Sars, 1850, p. 138 (redescribed in Sars, 1857, p. 160), the Commission is therefore requested:

(1) to use its plenary powers:

(a) to suppress the specific name *gracilis* Dana, 1846, as published in the binomen *Lomedea* (err. pro *Laomedea*) *gracilis* and all uses of that name prior to its publication by

- Sars (M.), 1850, for the purposes of both the Principle of Priority and the Principle of Homonymy;
- (b) to suppress the specific names *pileata*, *thompsoni*, *punctata* and *sarnica* Forbes, 1841, and the specific names *lineata* and *conspicua* Forbes, 1848, all as combined with the generic name *Thaumantias* Eschscholtz, 1829, for the purposes of the Principle of Priority but not for those of the Principle of Homonymy;
- (2) to place the specific name *gracilis* Sars, 1850, as published in the binomen *Laomedea gracilis*, and as interpreted by the lectotype restricted herein, on the Official List of Specific Names in Zoology.

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